



Attorney Docket No. 81862P239

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of:

Kent Wendorf, et al.

Application No.: 09/751,792

Filed: December 29, 2000

For: SYSTEM AND METHOD FOR  
ALLOCATING BANDWIDTH IN  
A NETWORK NODE

Date of Allowance: July 21, 2005

Confirmation No.: 5312

Examiner: Vincent, David Robert

Art Unit: 3628

EXPRESS MAIL STATEMENT

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Commissioner for Patents  
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INFORMATION DISCLOSURE STATEMENT

Sir:

Enclosed is a copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 together with copies of the documents cited on that form, except for copies not required to be submitted (e.g., copies of U.S. patents and U.S. published patent applications need not be enclosed). It is respectfully requested that the cited documents be considered and that the enclosed copy of Information Disclosure Citation Form PTO-1449 or PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant(s).

**The applicants wish to bring to the attention of the Examiner the following prior art:**

**In an ATM switch, Quality-of-Service (QoS) features allow each virtual**

connection to specify a minimum cell rate. In prior art chip sets of Stratacom, Inc. of San Jose, California, the minimum cell rate is specified by an Inter-Cell-Gap (ICG) which has an integer and fractional component and whose units are cell-times per cell-service. Bandwidth distribution is performed in a two step process: maximum bandwidth distribution per Service Group and minimum bandwidth distribution per Class-of-Service Buffer (COSB).

The Class-of-Service Buffer Server (CBS) is a class-based scheduler which supports minimum guaranteed bandwidth scheduling among all service classes. A single COSB is selected by the CBS from the 16 COSB's within a preselected SG. With each service division, the CBS determines whether the selection is in the guaranteed bandwidth (GBW) region, or whether it is excess bandwidth, i.e. "ok-to-serve." The GBW service is referred to as "must-serve" since the scheduler must serve this Class in order to meet the GBW. The determination that a the selection is in "must-serve" or "ok-2-serve" is based upon the comparison of a Current Time (CT) counter and the per COSB Theoretical-Departure-Time (TDT) counter of the selected COSB. In the must-serve region, the COSB lagging most behind the Current Time is selected for service. In the must-serve region the COSB specific Inter-Cell-Gap (ICG) is added to the TDT of the winning COSB, thereby detracting credit in preparation for the next selection process.

The handling of an empty COSB requires special treatment. If a COSB is inactive (empty) for a period, its TDT will fall behind the Current Time. In the prior art Stratacom QE48, in order to prevent the COSB from accumulating an excess of service credit, empty COSB's TDT are adjusted to CT when they lag behind CT.

The problem: If a SG cannot satisfy the minimum rates of all the COSB's

with in it, the active COSB TDT values will fall behind the CT resulting in an accumulation of service credit. If some empty COSB's within this SG should become active (non-empty) during this time, they will not have any service credit built up and may suffer a severe service delay lag time demonstrated by a large cell delay variation. The lagging COSB will not be selected until the TDTs of the COSBs with service credit have caught up.

The prior art QE48 attempted to resolve this problem by maintaining an indication that all COSBs in a SG were in the must-serve region. In this state, the Current Time was stopped. This allowed variation between the service credit of previously queued COSBs and a recent arrival to an empty COSB to close in a short period of time. Unfortunately, this method violates the fundamental architecture because the true difference between the COSB TDTs and CT has been lost due to the stopping of CT, therefore the region of service is unknown. Differentiation between guaranteed and excess bandwidth distribution was lost. For the Statacom 48 chip set, Stopping of Current Time was not enabled to circumvent the problem because its effects are worse than what it was attempting to fix.

Pursuant to 37 C.F.R. § 1.97, the submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made and is not to be construed as an admission that the information cited in this statement is material to patentability.

Pursuant to 37 C.F.R. § 1.97, this Information Disclosure Statement is being submitted under one of the following (as indicated by an "X" to the left of the appropriate paragraph):

XXX 37 C.F.R. §1.97(b).

       37 C.F.R. §1.97(c). If so, then enclosed with this Information Disclosure Statement is one of the following:

       A statement pursuant to 37 C.F.R. §1.97(e) or

       A check for \$180.00 for the fee under 37 C.F.R. § 1.17(p).

       37 C.F.R. §1.97(d). If so, then enclosed with this Information Disclosure Statement are the following:

(1) A statement pursuant to 37 C.F.R. §1.97(e); and

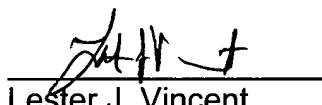
(2) A check for \$180.00 for the fee under 37 C.F.R. §1.17(p) for submission of the Information Disclosure Statement.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: October 21, 2005

  
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Substitute for Form 1449/PTO			Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>			Application Number	09/751,792
			Filing Date	December 29, 2000
			First Named Inventor:	Kent Wendorf
			Art Unit	3628
			Examiner Name	Vincent, David Robert
			Attorney Docket Number	81862P239
Sheet	1	of	2	

## U.S. PATENT DOCUMENTS

## FOREIGN PATENT DOCUMENTS

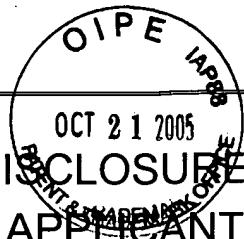
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				

Examiner Signature		Date Considered	
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet 2 of 2

***Complete if Known***

Application Number 09/751,792

Filing Date : December 29, 2000

First Named Inventor: Kent

Art Unit 3628

Sheet 2 of 2

## NON-PATENT LITERATURE DOCUMENTS

Examiner Signature		Date Considered	
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